

from *v*, through the solution and platinum strip to *r*. When a dish is removed, the current through 8, 9, is, of course, broken, and the spring 1, 2, comes in contact with *v*, making the connection with the resistance coil, which, being equal to the resistance in the dish, keeps the current the same in the other dishes. If two dishes are to be used, and the solution is only ready for one, the switch *r* is connected with *t*, and the dish which is ready is placed on the platinum above *v'*. The current will then pass from *t* to *v'*, and through the strip 1, 2, to the resistance coil *w'*, and then through *x'* to *v'*, and finally through the liquid to *x''* and *b*. When ready to add the second dish to the circuit, it may be done by simply placing the dish in its place over *v'*, when it will automatically disconnect the resistance coil *w'*; and the strength of the current will remain the same, and sufficient for both dishes. Either one of the two dishes may now be removed at any time without altering the strength of the current, or in any way interfering with the work of the other dish in the circuit. The third dish may also be added at any time, by simply changing the switch *r* from *t* to *u*, and manipulating the switches *c* and *g*, so as to increase the current sufficiently. In the same manner, any number of dishes may be used. The strength of the current may be ascertained by passing it through acidulated water, in an inverted tube, graduated in cc., and noting the amount of mixed gases liberated in a minute.—J. B. C.

The Detection of Iodine in Presence of Large Quantities of Bromine. P. S. Brito. Chem. News, 50, 210.

If bromine and iodine be liberated by chlorine and the solution shaken up with chloroform, the violet colour of the iodine will be masked by the brown colour of the bromine when a large quantity of the latter is present. The violet at once appears on addition of ferric sulphate. —J. B. C.

New Books.

NEUE METHODEN ZUR ANALYSE DER GASE. Von Dr. WALTHER HEMPEL, Professor am Königl. Polytechnikum zu Dresden. Mit in den Text eingedruckten Holzstichen. Braunschweig: Druck und Verlag von Friedrich Vieweg und Sohn, 1880.

THIS work, important to all interested in technical gas analysis, is an 8vo volume, bound in paper cover and containing 120 pages of subject-matter, a table of contents, and twenty-two admirable woodcuts illustrating the apparatus in detail and in combined forms so as to indicate methods of working.

The Table of Contents will best illustrate the plan and method of the whole work. FIRST PART—ON TECHNICAL GAS ANALYSIS. I. General; II. Analysis by Absorption.—Description of the Apparatus. THE GAS-BURETTES: A, the Simple Gas-burette; Mode of Handling the Gas-burette; The Modified Winkler's Gas-burette, B₁. THE ABSORPTION-PIPETTES, B₂. The Simple Absorption-pipette for Solid and Liquid Reagents, C. THE COMBINED ABSORPTION-PIPETTES—The Combined Absorption-pipette, C₁. The Combined Absorption-pipette for Solid and Liquid Reagents, C₂. Handling the Absorption-pipettes. General Details concerning the Conducting of Absorption-analyses. Recorded Analyses. Special Details on the Estimation of the Simple Gases: 1, Carbonic Acid; 2, Carbonic Oxide; 3, Oxygen; 4, Heavy Hydrocarbons. III. Analysis by Combustion.—1. The Combustion by Explosion. General Description of the Apparatus. The Explosion-pipette. 2. The Absorption of Hydrogen with Palladium. 3. Fractional Combustion. SECOND PART—ON AN EXPEDITIOUS AND EXACT GASOMETRIC METHOD. IV. General Description of Apparatus.—The Measuring Bulb. The Adjustable Mercurial Niveau C. The

Gas-pipettes. Handling the Apparatus. Measuring. The Absorptions. Recorded Analyses. V. The Mercurial Trough without Barometric Tube.

ACETIC ACID AND VINEGAR, AMMONIA AND ALUM. (Churchill's Technological Handbooks.) London: J. & A. Churchill, 11 New Burlington Street, 1885.

SMALL 8vo volume bound in cloth. As the preface shows, the work is edited by Mr. JOHN GARDNER, F.I.C., F.C.S. It contains 193 pages of subject-matter, short table of contents, and an alphabetical index, and is illustrated with twenty-eight woodcuts.

The first chapter of the book is devoted to ACETIC ACID AND VINEGAR, and this includes a description of the process of carbonising wood in close retorts and obtaining pyrolygneous acid. The second chapter deals with AMMONIA, and the third with ALUM AND ALUM-MAKING.

Monthly Patent List.

ENGLISH APPLICATIONS.

1885.

I.—GENERAL PLANT, APPARATUS, AND MACHINERY.

3597 L. H. Pearce, London. Improved means for heating liquids, applicable also for vapourising and distilling the same. March 20

3731 E. B. Petrie and A. S. Fox, Manchester. An improved composition to be applied to straps, belts, ropes, and brakes used in and in conjunction with machinery, which composition is also applicable to other articles for the purpose of protecting and preserving them from injury arising from moisture or exposure to the atmosphere. March 23

3736 W. H. Lake. Improvements in and relating to steam-boiler and other furnaces. Communicated by L. Broussas, France. March 23

3896 J. H. Johnson, London. Improvements in furnaces for burning pulverulent materials. Communicated by M. Perret, France. March 26

3921 L. W. Sutcliffe, London. Improvements in self-feeding and smoke-consuming furnaces and appliances for heating muffles and drying stoves and for other like purposes. March 27

4018 F. W. Gordon, London. Improvements in hot blast stoves. Complete specification. March 31

1270 G. H. Lilley, London. Improvements in mills for reducing solid crystalline substances to powder. April 7

4377 T. W. Barber, Ulverston, Lancashire. Improvements in hot blast apparatus. April 9

4580 J. McInnes, Glasgow. An improved tube for transmitting air or other fluids under pressure. April 11

1613 H. McQueen Weir, Boone, Iowa, United States. Furnaces. April 11

1619 A. M. Clark, London. Improvements in stone and ore crushers. Communicated by D. Brennan, Jun., and G. G. Young, United States. Complete specification. April 11

1666 J. S. Booth, London. Improvements in the construction of boiler and other furnaces. Complete specification. April 15

4710 M. Keenan, London. An improved non-conducting composition for protecting boilers, cylinders, pipes, and other objects against radiation. April 16

4711 M. Keenan, London. Improvements in means for protecting boilers, cylinders, pipes, and other objects against radiation. April 16

1831 C. Jones, London. Improvements in apparatus used when heating vessels or chambers by steam-heated jackets. April 18

1835 P. Jensen, London. A system or combination of pumps for producing vacuum. Communicated by L. A. Riedinger, Germany. April 18

1839 F. Maxwell-Lytle, London. Improvement in crucibles, muffles, and other refractory apparatus. April 20

II.—FUEL, GAS, AND LIGHT.

3683 S. Clarke, London. Improvements in the manufacture of night-lights. March 21

3776 A. H. Reed, London. An improvement in the manufacture of hydrogen gas. Communicated by G. E. Moore, United States. Complete specification. March 21

3790 W. Black, Glasgow. Improvements in the manufacture of briquettes or fuel blocks. March 24

3870 H. Dempster, Jun., Manchester. Improvements in the construction of condensers used in the manufacture or purification of gas. March 26

3908 A. T. D. Berrington, Ebbw Vale, Monmouthshire. An improved method of regenerating waste gases. March 27
 4082 G. Brown, London. Improvements in the manufacture of candles and night-lights, and in the preparation of oil or spirit, to cause disinfecting or deodorizing vapours to be given off from them when burnt. March 31
 4119 G. L. O. Davidson, Manchester. Improvements in the construction of apparatus for washing or purifying smoke. April 2

4114 W. Black, Glasgow. An improved process of treating coal dross and other carbonaceous substances. April 9
 4461 A. Klonne, London. The improvement in gas-washers called column-washers. April 10
 4533 J. Roots, London. An improved method of treating illuminating oils to increase brilliancy of flame. April 13
 4616 A. M. Clark, London. Improvements in, and in furnaces for, manufacturing illuminating gas. Communicated by F. Eger, United States. April 11
 4795 S. Butler, London. Improvements in the manufacture of artificial fuel, and in machinery employed therein. April 18

III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, ETC.

4011 J. A. B. Bennett, Birmingham. Improvements in the method of introducing steam and other vapours and gases into carbonaceous matter during the process of distillation. March 31

IV.—COLOURING MATTERS AND DYES.

3803 H. J. Haddan, London. Colouring matters obtainable by the combination of tetrazodilolyl or tetrazodixylol-salts with alpha- and beta-naphthylamine or their mono- and disulpho-acids, and process for the manufacture of the same. Communicated by F. Bayer & Co., Germany. March 21
 3889 J. Inray, London. Manufacture of blue and violet colouring matters by oxidation of the thio-bases of diamines. Communicated by J. Boussioasson, France. March 26
 4536 J. H. Johnson, London. The preparation of alkali-oxo-derivatives of a base resembling a chinoline base. Communicated by Dr. A. Scheidel, Italy. April 13

V.—TEXTILES, COTTON, WOOL, SILK, ETC.

3632 P. Frankenstein, Manchester. Improved finish in colours on waterproof fabrics. March 21
 3648 C. Moon, London. Making textile fabrics fireproof, and at the same time waterproof, yet allowing free ventilation. March 23

VI.—DYEING, CALICO PRINTING, PAPER STAINING, AND BLEACHING.

3718 W. Mather, London. Process for bleaching cotton yarns and fabrics. Complete specification. March 23
 4118 J. Farmer, Manchester. Improvements in the construction of apparatus employed for washing, chloring, scouring, soaping, dunging, and dyeing woven fabrics. Partly communicated by A. Lalancé, Germany. April 2
 4281 J. Burnes, Manchester. Improvements in dyeing cotton and other vegetable fibres, and yarns and fabrics composed thereof. April 7

VII.—ACIDS, ALKALIS, AND SALTS.

3761 W. P. Thompson, Liverpool. Improvements in the extraction of phosphorus from phosphide of iron or ferro-phosphor. Communicated by L. Imperatori, Germany. March 21
 3816 B. Biggs and T. Terrell, London. Improvements in decomposing sulphate of iron, and in the obtaining sulphuric acid, sulphurous acid, and red oxide of iron thereby. March 25
 3865 J. Anderson, Dundee. Improvements in the manufacture of sodium. March 26
 3895 J. J. Hood, London. Improvements in the manufacture of chromates and bichromates. Complete specification. March 26
 3933 F. S. Newall, London. Improvements in the treatment of alkali waste by other materials in order to obtain useful products. March 27
 3934 F. S. Newall, London. Improvements in obtaining sulphur from sulphuretted hydrogen. March 27
 4062 E. F. Truchsel, London. An improved method or process of producing carbonate of sodium. March 31
 4101 D. H. Lowry, Liverpool. An improved caustic drum lid or appliance for closing small hand holes. April 1
 4138 F. Maxwell-Lyte, London. Improvements in the manufacture of sodium aluminate and other aluminous compounds, and in the utilisation of gases resulting therefrom, and in the construction of furnaces used in the manufacture of sodium aluminate. April 1
 4163 H. W. Todd, Liverpool. Improvements in or appertaining to caustic or other drum lids or closers. April 2
 4175 F. J. B. Raken, London. An improved method of manufacturing carbonic acid (CO₂) under any desired pressure. Communicated by Dr. H. Boins and J. F. Boins, Holland. Complete specification. April 2
 4261 A. McDonald Graham, Lewisham, Kent. Improvements in the manufacture of the sulphates of manganese and alumina. April 7
 4271 H. Gaskell, jun., London. Improvements in the treatment of bicarbonate of soda for obtaining useful products therefrom. April 7

4285 G. Attwood, London. An improved method and means for the continuous oxidising and desulphurising of ores or minerals. April 7
 4290 W. J. Chrystal, Glasgow. Improvements in the manufacture of chromates and bi-chromates. April 7
 4436 C. Wigg, Liverpool. Improvements in apparatus for the manufacture of carbonate of soda. April 10

VIII.—GLASS, POTTERY, AND EARTHENWARE.

3886 R. Roote, London. Improvements in the manufacture of pottery ware. March 26
 3897 J. H. Johnson, London. Improvements in the manufacture of artificial stone. Communicated by I. Brandstätter, Austria. March 26
 4181 G. F. Redfern, London. Improvements in or applicable to flattening furnaces employed in the manufacture of cylinder glass. Communicated by E. Masquellier, Belgium. April 2

IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

3916 E. Ormerod and W. C. Horne, London. Improvements in rendering cements luminous and damp proof. March 27
 3932 J. Homan, London. Improvements in fireproof floors. March 27
 4151 W. E. Heys, Manchester. Improvements in the manufacture of fire and waterproof boards or paper from asbestos. Communicated by E. Ladewig, Germany. Complete specification. April 2
 4398 C. H. Murray, London. Improvements in means or apparatus for making bricks or other forms of clay or plastic materials. April 9
 4411 W. Tapp, Bristol. A new or improved construction of tiles for stairs. April 10
 4486 E. Ormerod, London. Improvements in apparatus and mode for the production of paving slabs, blocks, sinks, man-holes, roofing tiles, and other similar articles in concrete, in terra-cotta and other similar materials. April 11

X.—METALLURGY, MINING, ETC.

3591 J. Smith, Stoke-upon-Trent. The manufacture of a new material for polishing or brightening metals. March 20
 3623 P. M. Parsons, London. Improvements in the manufacture of ordnance. March 20
 3724 W. H. Tooth and J. E. Rooker, London. Improvements in furnaces and apparatus employed in the manufacture and refining of iron and the conversion of iron into steel. March 23
 3737 E. Morewood, London. Improvements in the manufacture of iron or other metal into sheets, plates, or other forms, and in stretching or extending or improving the surface of such sheets, plates, or other forms. March 23
 3738 E. Morewood, London. Improvements in coating with tin, terne, or other coating metal, sheets, plates, or pieces of iron or other metal. March 23
 3808 W. E. Wynne, London. A new and useful improvement in the manufacture of steel. Communicated by H. W. Oliver, jun., and J. P. Witherow, United States. Complete specification. March 21
 3859 W. L. Wise, London. A method or process for the extraction of precious and other metals from millstone and other analogous stones or rocks. Communicated by V. Popp, France. March 25
 3923 H. Wiggin (M.P.), H. A. Wiggin, A. S. Johnstone, and W. W. Wiggin, London. Improvements in the manufacture of nickel and cobalt. March 27
 3989 R. A. Gilson, W. J. Booser, and G. Smith, London. Improvements in ovens applicable for heating iron castings preparatory to annealing them, and for other purposes. March 28
 4016 M. Vesenmayer, London. Improvements in the method of collecting "float gold" in mining operations. March 30
 4088 E. Matheson, London. Improvements in the manufacture of tinned or galvanized metal plates and like articles. Communicated by E. V. McCandless, United States. March 31
 4293 T. Bayley, Birmingham. A method of manufacturing oxide of iron and obtaining other useful products. April 7
 4309 G. F. Redfern, London. Improvements in treating auriferous and other metalliferous sand and dust and apparatus therefor. Communicated by A. Clement and G. Perret, Italy. April 7
 4371 W. H. Lako, London. Improvements relating to the electro-plating of vegetable, animal, and other substances. Communicated by E. Quintaliet and A. I. Mahu, France. April 8
 4417 A. Lavroff and A. Schensnovich, London. Improvements in anti-friction metal called Lavrow's phosphorous anti-friction metal. April 9
 4471 C. D. Abel, London. Improved mode of and apparatus for utilising the waste gases of puddling and reheating furnaces. Communicated by F. C. Glaser, Germany. April 10
 4478 W. E. A. Hartmann, Swansea. Improvements in treating waste liquors from the manufacture of tinplates. April 11
 4498 W. A. Thoms and H. F. Oddy, London. An improvement in the coating of metals with an electro deposit of platinum. April 11
 4531 F. W. Gerhard, Wolverhampton. Improvements in utilising blast furnace slag. April 11
 4574 W. P. Thompson, Liverpool. Improvements in processes applicable for extracting phosphates from phosphatic slugs. Communicated by G. Hoyermann, Germany. April 11
 4605 P. Sharpe and M. H. Simpson, London. Improvements in machinery for breaking pig-iron. April 14

4706 W. E. Gedge, London. Improvements in the manufacture of metallic lead from the sulphurous ores thereof. Communicated by S. Trayner, Spain. April 16
4714 F. J. P. Chubb, Liverpool. An improved process for the manufacture of iron and steel direct from the ore with gaseous fuel, and apparatus employed therein. Communicated by A. Hansen, Germany. April 17
4752 T. Cooper, London. Improved apparatus for the manufacture of chilled castings. April 17

XI.—FATS, OILS, AND SOAP MANUFACTURE.

3703 T. Rowley, H. Grimshaw, and J. H. Kidd, Manchester. Improvements in the treatment of oils used in the manufacture of floorcloths, and for other purposes. March 23
3855 C. T. Kingzett, London. Improvements in the production of compounds or mixture to be used for the destruction of insects, also for washing animals, and generally as soaps or detergents, and for purifying purposes. March 25
3891 C. T. Kingzett, London. Improvements in the production of liquid soaps and other liquids which may be usefully employed as insecticides, also for washing animals, and for preserving and general purifying purposes. March 26
3977 L. A. Groth, London. A new or improved method of scouring or removing the oil from animal and vegetable substances by means of infusorial earth and heat. Communicated by A. Eberz, Germany. March 28
4090 G. Payne, London. An improved process of refining glycerine. March 31

XII.—PAINTS, VARNISHES, AND RESINS.

3839 E. V. Gardner, London. Improvements in the manufacture of white lead, and in apparatus to be employed therefor. March 25
4313 H. J. Allison, London. An improved substance for lining or covering steam boilers, pipes, and other objects. Communicated by S. Dohmann & Co., Denmark. April 8
4415 P. Denniston, Glasgow. An improved anti-fouling and anti-corrosive composition for ships and submerged structures. April 9

XIII.—TANNING, LEATHER, GLUE, AND SIZE.

4778 H. S. Barrow, J. Bostock, and G. A. Hardy, London. An improved finishing machine for leather. April 18

XIV.—AGRICULTURE, MANURES, ETC.

4718 T. H. Slater, Kirkwall, Orkney. A new or improved combined insect destroyer and soil fertilizer. April 17

XV.—SUGAR, STARCH, GUM, ETC.

3781 W. Walker, London. Improvements in apparatus for extracting the water of condensation from sugar boiling apparatus. March 21
4332 A. Cook, Glasgow. Improvements in apparatus for reducing or disintegrating sugar canes or other vegetable substances. April 8
4753 B. H. Remmers, Glasgow. Improvements in the manufacture of starch and in apparatus employed therein. Communicated by L. von Wagner and A. Glltzer, Austria. April 17

XVI.—BREWING, WINES, SPIRITS, ETC.

3706 J. H. Loder, Utrecht, Netherlands. Improvements in the manufacture of alcoholic beverages. March 23
3768 J. Clayton, London. Improvements in apparatus for lifting malt liquors. March 24
4068 W. Lawrence, London. Improvements in the manufacture of beer and malt liquors, and in apparatus for the treatment and preparation of materials for the same. March 31
4521 J. Death, jun., Cheshunt. Improvements in grain and its preparation for use in brewing and distilling, and for feeding purposes. April 13

XVII.—FOOD PRESERVING, MEATS, ETC.

4823 H. J. Haddan, Westminster. Process and compound for preserving eggs. Communicated by P. G. Wind and C. C. Lussen, Germany. April 18

XVIII.—SANITARY CHEMISTRY, DISINFECTANTS, ETC.

3682 J. R. Shopland, London. An improved method of and means or apparatus for purifying sewage and other liquids. March 21
4046 A. Engle, Liverpool. Destroying and utilising sewage in buildings, towns, and cities. Complete specification. March 31
4082 G. Brown, London. Improvements in the manufacture of candles and night-lights, and in the preparation of oil or spirit, to cause disinfecting or deodorising vapours to be given off from them when burnt. March 31
4207 W. H. Beck, London. Improvements in processes for treating sewage and other waste waters for obtaining the fats, fatty acids, and fibrous matter contained in the same, and in apparatus to be employed therewith. Communicated by H.

Wagener and Prof. Dr. A. Müller, Germany. Complete specification. April 2

4173 E. Langen, London. Method of and apparatus for treating semi-liquid substances with purifying or other liquids. April 10
4332 J. W. Slater, London. Improvements in the treatment of sewage and water polluted with organic matter. April 13
4677 T. Stoner and J. Turton, Bradford. A combined disinfecting and fumigating compound. April 16
4711 H. J. Haddan, London. A method of disinfecting. Communicated by G. Langbein, Saxony. April 16
4802 J. B. Austin, London. Improvements in the manufacture of disinfecting powder. April 18

XIX.—PAPER, PASTEBOARD, ETC.

3921 G. P. Barnes, Dulwich. Improvements in the manufacture of paper and in machinery therefor. March 27
3980 D. C. Simpson, Glasgow. A new or improved process of preparing paper or similar materials to render indelible writings or other markings thereon. March 28
3982 H. H. Lake, London. An improved method or process of sizing paper pulp. Communicated by L. Lacoste, France. March 28
4176 W. Manning, London. Improvements in the process of treating gypsum or sulphate of lime for use in the manufacture of paper, and for other purposes. April 2
4569 A. McDougall, Penrith. Improvements in the construction of boilers or other vessels used in the conversion of woody or other fibres into pulp for the manufacture of paper or other articles prepared from pulped fibres. April 11

XXI.—EXPLOSIVES, MATCHES, ETC.

3602 R. Punshon, London. Improvements in safety blasting cartridges and detonators. March 20
3918 W. F. Ituston, London. Improvements in detonating for signals for railways. March 27
4517 G. D. Abel, London. An improved manufacture of nitrate of ammonia explosives. Communicated by F. Barbe, France. April 13
4853 J. Paulus, London. Improvements in caps or apparatus for exploding dynamite. Complete specification. April 20

ENGLISH PATENTS PUBLISHED.*

APPLIED FOR DURING 1881.

I.—GENERAL PLANT, APPARATUS, AND MACHINERY.

8031 W. R. Lake. Improved method of distillation and apparatus therefor. Communicated by F. König, Italy. 6d
8320 J. P. Jackson. Apparatus for filtering liquids. 6d
8577 H. H. Lake. Communicated by Schulz, Knaut & Co. Gas-generating furnaces. 4d
8777 J. H. Johnson. Process and apparatus for producing cold. Communicated by J. C. Rossi, United States. 10d
11509 L. A. Groth. Communicated by W. Backer. Improvements in gas-producer furnaces. 4d

II.—FUEL, GAS, AND LIGHT.

7156 D. Tildesley. Apparatus for injecting fuel and hot air into furnaces, and for injecting liquid and solid matter into retorts for gas-making, etc. 6d
8008 B. and W. P. Gibbons. Fire-clay gas retorts. 6d
8053 W. S. Sutherland. Improvements in and applicable to gas-producers. 6d
8311 H. E. Newton. Preventing stoppages in the ascension pipes in the manufacture of coal-gas. Communicated by Kinnno. 4d
8577 J. Cort. Adjustable dip pipes for the manufacture of gas. 6d
12157 L. A. Groth. Treatment of petroleum. Communicated by T. N. Flesch. 2d
1885.
915 F. J. Jones. The production of combustible gases from finely-pulverised coal, peat, wood-sawdust, etc. 4d
2169 A. Dempster. Purifying coal-gas. 4d

III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, ETC.

6995 B. J. B. Mills. Apparatus for carbonising bones and turf, and for coking and distilling brown-coal, pit-coal, and other carbonaceous materials by means of superheated steam. Communicated by A. Zwillingner, Vienna. 6d

IV.—COLOURING MATTERS AND DYES.

6311 C. D. Abel. Violet colouring matter. Communicated by Lucius and Brünig, Germany. 2d

*Any of these specifications may be obtained by post, by remitting the cost price, plus postage, to Mr. H. Reuter-Lack, Comptroller of the Patent Office, Southampton Buildings, Chancery Lane, London, W.C. The amount of postage may be calculated as follows:—

If the price does not exceed 8s.	4d.
Above 8s., and not exceeding 1s. 6d.	5d.
" 1s. 6d., " " 2s. 6d.	14d.
" 2s. 6d., " " 3s. 4d.	2d.

8744 C. D. Abel. Manufacture of colouring matters suitable for dyeing and printing. Communicated by Lucius and Brünig, Germany. 4d

8806 A. M. Clark. Process of combining certain diazo compounds with phenols and their sulpho-acids for the production of colouring matters. Communicated by R. Krügener and the Farbwerke vormals Bröner, Frankfurt. 4d

1885.

275 E. Passbury. Process and apparatus for drying colour paste and other strongly aqueous materials. 6d

V.—TEXTILES: COTTON, WOOL, SILK, ETC.

8893 R. S. Moss. Waterproof materials for wearing apparel and other purposes. 2d

VI.—DYEING, CALICO PRINTING, PAPER STAINING, AND BLEACHING.

5887 J. Wetter. Manufacture of antimonial compounds suitable as mordants in dyeing and printing. Communicated by M. B. Vogel, Leipzig. 4d

7909 W. Mather. Improvements in bleaching, and in apparatus for the purpose. 6d

8179 F. A. Gatty and F. A. Gatty. Bleaching certain classes of cotton fabrics. 4d.

1885.

86 H. Giesler. Apparatus for washing, scouring, bleaching, dyeing, etc., fibrous material in the form of slubbing slivers, rovers, or yarn. 6d

1912 W. Mather. Apparatus for steaming in the bleaching of fibres, fabrics, and yarns. 4d

VII.—ACIDS, ALKALIS, AND SALTS.

5898 W. R. Lake. Manufacture of ammonia, and apparatus therefor. Communicated by La Société Lorraine Industrielle. 8d.

7253 E. Solvay. Manufacture of chlorine. 4d

7259 E. Solvay. Manufacture of chlorine and chloride of lime. 4d

7260 E. Solvay. Manufacture of hydrochloric acid. 4d

7525 C. Wigg. Manufacture of carbonate of soda. 4d

8266 T. Higgin. Apparatus for disintegrating and removing impurities from lump salt. 6d

8300 H. J. Haddan. Process for the partial separation of Schaeffer's monosulpho acid from the alpha-monosulpho acid of beta-naphthol. Communicated by Bayer & Co., Elberfeld, Germany. 4d

11886 J. Meikle, jun. Purifying sulphuric and sulphurous acids and their salts. 2d

1885.

1868 W. R. Lake. The protection of nitrate of ammonia against deliquescence. Communicated by R. S. Penniman. 2d

IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

7111 J. Watson and J. L. Spoor. Kilns employed in the manufacture of Portland cement. 6d.

8236 G. Walker. Asphaltum for wood-paving, etc. 2d.

8317 J. Fottrell. Hygienic concrete for paving, etc. 4d

1885.

897 A. J. Boulton. Manufacture of tiles and other articles from plastic materials, and apparatus therefor. Communicated by F. C. A. Meier. 6d

2161 H. Fajfa. Means or apparatus for treating slurry or slip in the manufacture of Portland cement and bricks. 6d

X.—METALLURGY, MINING, ETC.

5166 A. W. Anderson. Facilitating the dissolution of metallic lead, etc. 6d

7206 J. Hargreaves and T. Robinson. Treating ores and substances containing antimony to obtain metallic antimony and other products, and appliances employed therein. 4d

7101 W. P. Thompson. Purification of iron ores and of iron by the basic process. Communicated by R. Schliwa, Dortmund. 4d

7707 H. J. Haddan. Manufacture of castings from furnace slag. Communicated by L. Perin, St. Arnaud. 6d

8013 A. Atwood and T. W. Barbor. Charging blast furnaces. 6d

8033 S. J. Coxeter and H. Nehmer. Manufacture of silico-carbon. 4d

8093 G. Bischof. Manufacture of spongy iron, and apparatus employed therefor. 4d

8295 J. A. Mays. Method of amalgamating or separating metals from their ores. 6d

8335 A. M. Clark. Preparing or treating copper. Communicated by W. Braun, Germany. 4d

8190 F. Siemens and J. G. Gordon. Reduction of iron ores and production of iron and steel. 2d

8192 F. Siemens and J. G. Gordon. Manufacture of iron and steel. 2d

8562 W. A. Vérol and P. Stewart. Obtaining copper, silver and gold from copper matte or regulus. 2d

8879 J. Mason. Treatment of the oxides of iron from iron pyrites or other sources, so as to render them more suitable for employment in the blast or other furnace. 6d.

13071 J. Simpson and E. W. Parnell. Obtaining gold and silver from auriferous and argentiferous sulphide of antimony ores. 2d

16651 F. W. Gerard and J. Smith. Depositing magnesium and its alloys. 2d

16652 F. W. Gerard and J. Smith. Depositing calcium and its alloys. 2d

16653 F. W. Gerard and J. Smith. Depositing aluminium and its alloys. 2d.

1885.

1917 W. R. Lake. Process for annealing copper or its alloys. Communicated by R. Wallace. 2d

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